

CLAIMS

What is claimed is:

1. A heat sink for assembly with a semiconductor device component, comprising:
a heat transfer element configured to be secured to the semiconductor device and including at least one non-linear passageway therethrough.
2. The heat sink of claim 1, wherein at least a portion of said heat transfer element comprises a plurality of superimposed, contiguous, mutually adhered layers of thermally conductive material.
3. The heat sink of claim 2, wherein said thermally conductive material comprises a metal.
4. The heat sink of claim 3, wherein said metal comprises copper, aluminum, tungsten, or titanium.
5. The heat sink of claim 2, wherein said thermally conductive material comprises a ceramic or a glass.
6. The heat sink of claim 1, wherein said heat transfer element comprises a plurality of particles that are secured to one another.
7. The heat sink of claim 6, wherein adjacent ones of said particles are sintered together.
8. The heat sink of claim 6, wherein adjacent ones of said particles are secured together with a binder.

9. The heat sink of claim 2, wherein at least some of said plurality of superimposed, contiguous, mutually adhered layers comprise sheets of said thermally conductive material.

10. The heat sink of claim 9, wherein adjacent sheets are secured together with an adhesive material.

11. The heat sink of claim 9, wherein adjacent sheets are thermally bonded together.

12. The heat sink of claim 1, wherein said at least one non-linear passageway is configured to permit airflow therethrough.

13. The heat sink of claim 1, further comprising a heat dissipation element adjacent to said heat transfer element and extending to a location remote from the semiconductor device.

14. The heat sink of claim 13, wherein at least a portion of said heat dissipation element comprises a plurality of superimposed, contiguous, mutually adhered layers of thermally conductive material.

15. The heat sink of claim 14, wherein said heat dissipation element includes a plurality of fins.